QC ABSTRACT

NAME OF WORK: Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeablity method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Steel	Bend test	One Test		1	1
		Tensile Test	One Test		1	1
		Yield Test	One Test		1	1
		ReBend test	One Test		1	1
6	Block(400*150*200)	BLOCK DENSITY	One Test		1	1
		WATER ABSORPTION	One Test		1	1
		DIMENSION ANALYSIS	One Test		1	1
		COMPRESSIVE STRENGTH	One Test		1	1
7	Precast (100mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
8	Precast (250mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1

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B.B.M.P. Bangalore

9	PCC(M15)	Compressive Strength(7days and 28days)	3 set /16-30 cum	30.02	6	6
10	WMM	Sieve Analysis	One Test		1	1
		Impact Value	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
11	BM	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral Aggregate	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
12	BC	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
13	BITUMEN	Ductility	One Test		1	1
		Softening Point	One Test		1	1
		Penetration	One Test		1	1
		Flash Point	One Test		1	1
		Fire Point	One Test		1	1
14	TACK COAT	Rate of spread	One Test		1	1
15	Mortar Sand	Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
		Compacted Bulk Density	One Test		1	1
		Loose Bulk Density	One Test		1	1
		SIEVE ANALYSIS	One Test		1	1

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B.B.M.P, Bangalore - 97

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2022-07-12-24** **Date: 18-06-22**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/25/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	15-06-22
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 (RA 2021) DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, (RA 2018) Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, (RA 2019) Determination of Soundness, Clause 5, Clause 6 IS 4031 Part 4, (RA 2019) Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, (RA 2019) Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11, (RA 2019)DETERMINATION OF DENSITY , Clause 6
Date of test	:	16-06-22
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.1	_
2	Finess by Air permeablity method (m^2/kg,Min)	284.5	225m^2/kg, Min
3	Density (gm/cc)	3.13	_
4	Standard Consistency (%)	28%	Not specified
5	Initial Setting time	155 minutes	Not less than 30 minutes
6	Final Setting time	260 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	2mm	Not more than 10 mm

* The results obtained are satisfactory as per standard requirements.

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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Authorized Signatory
Quality Manager

Page 1/1
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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2022-07-12-24** **Date: 14-07-22**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/25/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	15-06-22
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, (RA 2019) Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, (RA 2019) Determination of Compressive Strength, Clause 6
Date of test	:	16-06-22
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	58.5N/mm^2	Not less than 53 N/mm^2

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Quality Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2022-07-12-24** **Date: 18-06-22**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/25/2022-23
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	15-06-22
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2021 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	15-06-22

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	214	214	1.4	98.6	90-100
3	20 mm	7254	7468	49.8	50.2	30-70
4	10 mm	4442	11910	79.4	20.6	10-35
5	4.75 mm	2685	14595	97.3	2.7	0-5
6	Pan	405	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2022-07-12-24** **Date: 18-06-22**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	10.6	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.3	
3	Specific Gravity	2.64	–
4	Bulk Density(Loose) (Kg/l)	1.49	–
5	Bulk Density(Compacted) (Kg/l)	1.52	–
6	Water Absorption(%)	0.17	–

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2022-07-12-24** **Date: 17-06-22**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094
Customer Reference	:	BBMP/EE/BTP/WO/25/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	15-06-22
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2021 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	15-06-22

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	237	237	4.7	95.3	90-100
3	10 mm	2544	2781	55.6	44.4	25-55
4	4.75 mm	2107	4888	97.8	2.2	0-10
5	Pan	112	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2022-07-12-24** **Date: 17-06-22**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	10.7	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.4	
3	Specific Gravity	2.65	–
4	Bulk Density(Loose) (Kg/l)	1.53	–
5	Bulk Density(Compacted) (Kg/l)	1.57	–
6	Water Absorption(%)	0.19	–
7	Aggregate crushing Value(%)	25.6	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.5	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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Authorized Signature
Quality Manager

Assistant Executive Engineer
Vidyaranyapura Sub Division
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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2022-07-12-24** **Date: 17-06-22**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/25/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 15-06-22

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2021
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 15-06-22

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	27	27	2.7	97.3	90-100	90-100	90-100	95-100
3	2.36 mm	55	82	8.2	91.8	60-95	75-100	85-100	95-100
4	1.18 mm	239	321	32.1	67.9	30-70	55-90	75-100	90-100
5	600 micron	205	526	52.6	47.4	15-34	35-59	60-79	80-100
6	300 micron	203	729	72.9	27.1	5-20	8-30	12-40	15-50
7	150 micron	191	920	92.0	8.0	0-10	0-10	0-10	0-15
8	Pan	80	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2022-07-12-24** **Date: 17-06-22**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.5	_
2	Specific Gravity	2.59	_
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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Vidyaranyapura Sub Division
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Format No: CP/TF/01

TEST REPORT OF PRECAST COVER SLAB

Lab ID	:	**CP-2022-07-12-24** **Date: 22-06-22**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/25/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	18-06-22
Sample Type /Size	:	Precast Cover Slab (100 mm Thick)
Reference to BIS codes	:	IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete
Date of test	:	18/06/2022

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	75.51	100.53	1.116	4477	80.9	18.1	16.8	21.0
2	Cover Slab-2	75.49	100.62	1.122	4475	82.3	18.4	17.1	21.4
3	Cover Slab-3	75.50	100.79	1.118	4476	81.5	18.2	16.9	21.2

* The results obtained are satisfactory as per standard requirements.

Note:

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Quality Manager

Assistant Executive Engineer
Vidyaranyapura Sub Division
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Format No: CP/TF/01

TEST REPORT OF PRECAST COVER SLAB

Lab ID	:	**CP-2022-07-12-24** **Date: 22-06-22**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/25/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	18-06-22
Sample Type /Size	:	Precast Cover Slab (250 mm Thick)
Reference to BIS codes	:	IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete
Date of test	:	18/06/2022

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	200.34	250.32	2.915	31517	680.5	21.6	20.1	25.1
2	Cover Slab-2	200.61	250.45	2.963	31602	720.5	22.8	21.2	26.5
3	Cover Slab-3	200.79	250.65	2.978	31659	760.5	24.0	22.3	27.9

* The results obtained are satisfactory as per standard requirements.

Note:

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Authorized Signatory
Quality Manager

Assistant Executive Engineer
Vidyaranyapura Sub Division
B.B.M.P, Bangalore - 97

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-12-24** **Date: 30/06/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/25/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 26-06-22

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 30/06/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	23/06/2022	30/06/2022	150.70 X 150.46 X 151.78	22674	8.451	284.3	12.5	12.7
2	PCC	M15	23/06/2022	30/06/2022	149.84 X 151.97 X 151.15	22771	8.286	291.1	12.8	
3	PCC	M15	23/06/2022	30/06/2022	149.56 X 149.99 X 149.76	22432	8.879	284.1	12.7	

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

Assistant Executive Engineer
Vidyaranyapura Sub Division
B.B.M.P, Bangalore - 97

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL | ENVIRONMENTAL
WATER TESTING | GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-12-24** **Date: 21/07/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/25/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 26-06-22

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 21/07/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	23/06/2022	21/07/2022	150.32 X 150.94 X 151.92	22689	8.861	392.7	17.3	17.3
2	PCC	M15	23/06/2022	21/07/2022	149.49 X 150.87 X 150.89	22555	8.423	397.1	17.6	
3	PCC	M15	23/06/2022	21/07/2022	149.30 X 151.72 X 151.51	22653	8.728	385.5	17.0	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-12-24** **Date: 30/06/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/25/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 26-06-22

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 30/06/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm^2)	(N/mm^2)
1	PCC	M15	23/06/2022	30/06/2022	150.10 X 151.38 X 150.00	22723	8.534	284.1	12.5	12.3
2	PCC	M15	23/06/2022	30/06/2022	149.85 X 149.48 X 150.13	22400	8.154	271.6	12.1	
3	PCC	M15	23/06/2022	30/06/2022	150.16 X 149.97 X 151.66	22519	8.809	278.8	12.4	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID	:	**CP-2022-07-12-24** **Date: 21/07/2022**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/25/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	26-06-22
Customer ID	:	PCC
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M15 / 28 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5
Date of test	:	21/07/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm^2)	(N/mm^2)
1	PCC	M15	23/06/2022	21/07/2022	150.82 X 150.43 X 150.75	22688	8.714	395.4	17.4	17.4
2	PCC	M15	23/06/2022	21/07/2022	150.99 X 150.34 X 150.99	22699	9.060	400.6	17.6	
3	PCC	M15	23/06/2022	21/07/2022	150.58 X 149.84 X 151.99	22562	8.523	385.8	17.1	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-12-24** **Date: 30/06/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/25/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 26-06-22

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 30/06/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm^2)	(N/mm^2)
1	PCC	M15	23/06/2022	30/06/2022	151.38 X 150.98 X 149.52	22855	8.703	283.4	12.4	12.5
2	PCC	M15	23/06/2022	30/06/2022	151.64 X 151.51 X 151.98	22975	8.871	282.0	12.3	
3	PCC	M15	23/06/2022	30/06/2022	150.73 X 150.87 X 149.95	22740	8.890	293.4	12.9	

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****End of Report****

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2022-07-12-24** **Date: 21/07/2022**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/25/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 26-06-22

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 21/07/2022

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	23/06/2022	21/07/2022	151.61 X 151.07 X 151.14	22904	8.868	398.4	17.4	17.8
2	PCC	M15	23/06/2022	21/07/2022	149.11 X 151.84 X 150.01	22641	8.662	405.5	17.9	
3	PCC	M15	23/06/2022	21/07/2022	149.35 X 151.32 X 150.56	22600	9.043	406.4	18.0	

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Quality Manager

Assistant Executive Engineer
Vidyaranyapura Sub Division
B.B.M.P, Bangalore - 97

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Format No: CP/TF/2017

TEST REPORT FOR SAND MASONRY MORTARS

Lab ID : **CP-2022-07-12-24** **Date: 21-06-22**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division

Agency : Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094

Customer's Reference : BBMP/EE/BTP/WO/25/2022-23

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 18-06-22

Sample Type : Fine Aggregate, M.Sand for Mortar

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2116-1980 (RA-2007) (Specification for Sand for Masonry Mortars)
IS: 2386 :1963(Part - 1, 3) RA2021
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 18-06-22

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS: 2116-1980 (RA-2007)
1	4.75 mm	0	0	0	100	100
2	2.36 mm	85	85	8.5	91.5	90-100
3	1.18 mm	200	285	28.5	71.5	70-100
4	600 micron	146	431	43.1	56.9	40-100
5	300 micron	116.5	547.5	54.8	45.3	5-70
6	150 micron	412.5	960	96.0	4.0	0-15
7	Pan	40	1000	100.0	0.0	0

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Assistant Executive Engineer
Vidyaranyapura Sub Division
B.B.M.P, Bangalore - 97

TEST REPORT FOR SAND MASONRY MORTARS

Lab ID : **CP-2022-07-12-24** **Date: 21-06-22**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	3.18	_
2	Specific Gravity	2.51	_
3	Material finer than 75 micron(%)	12.2	Crushed Fine aggregate Max 15%
4	Compacted Bulk Density (Kg/litre)	1.90	_
5	Loose Bulk Density (Kg/litre)	1.73	_

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Authorized Signatory
Quality Manager

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Assistant Executive Engineer
Vidyaranyapura Sub Division
B.B.M.P, Bangalore - 97

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

Format No: CP/TF/01

TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

Lab ID	:	**CP-2022-07-12-24** **Date: 22-06-22**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL Layout 3rd Block and Balance reaches of NTI Layout in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division
Agency	:	Sri.Subba Reddy K V, No:106/B Aswatha Narayana RMV, 2nd Stage Bangalore-560094
Customer's Reference	:	BBMP/EE/BTP/WO/25/2022-23
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	18-06-22
Sample Type/Size	:	Solid concrete blocks size (400X150X200)mm
Reference to BIS codes	:	IS : 2185 (Part 1) : 2005(RA 2020) Concrete Masonry Specification Part 1:Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex -C Clause 9.3 and10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10)
Date of test	:	18-06-22

BLOCK DENSITY:

Sl. No.	Measurement of overall Dimensions of Individual Blocks			Overall Volume of the Block in Cubic Centimetres	Weight of Oven Dried Block in Kilograms to the nearest 10 Gram	Block Density in Kg/cum*10^6	Avg.Block Density in (Kg/cum)	As per IS 2185(Part 1) :2005 (RA 2010)
	Length	Breadth	Height					
	mm	mm	mm	(Cm^3)	Kg	Kg/m^3	Kg/m^3	
1	400	150	201	12060	21.563	1788.0	1791.2	Not less than 1800Kg/m^3
2	405	153	203	12579	23.160	1841.2		
3	402	153	203	12486	21.779	1744.3		

WATER ABSORPTION:

Sl. No.	Wet weight after water absorption	Dry weight (Oven dry)	Water Absorption	Avg.Water Absorption	As per IS 2185(Part 1):2005 (RA 2010)
	kg	kg	%	%	
1	24.91	23.69	4.89	4.25	Shall not be more than 10% by mass
2	25.57	24.48	4.28		
3	24.44	23.57	3.59		

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Assistant Executive Engineer
Vidyaranyapura Sub Division
B.B.M.P, Bangalore - 97

Lab ID : **CP-2022-07-12-24** **Date: 22-06-22**

DIMENSION ANALYSIS

Sl.no	Length mm	Breadth mm	Height mm	Requirement as per IS 2185(Part 1):2005
1	400	150	200	Length : ± 5mm Breadth : ± 3mm Height : ± 3mm
2	401	150	201	
3	401	153	201	
4	404	151	200	
5	400	152	203	
6	401	151	199	
7	401	150	201	
8	401	152	201	
9	400	152	200	
10	400	150	202	
11	400	151	201	
12	401	152	199	
13	401	153	202	
14	403	149	203	
15	403	150	199	
16	400	150	202	
17	400	152	199	
18	404	152	199	
19	400	149	202	
20	400	150	200	
Average of 20	**401**	**151**	**201**	

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Assistant Executive Engineer
Vidyaranyapura Sub Division
B.B.M.P, Bangalore - 97

Lab ID : **CP-2022-07-12-24** **Date: 22-06-22**

COMPRESSIVE STRENGTH:

Sl. No.	Size of solid block		Area	Failure Load	Compressive strength	Average Compressive strength
	Length	Breadth				
	mm	mm	(mm^2)	(KN)	N/mm^2	(N/mm^2)
1	400	150	60048	269.2	4.5	4.2
2	401	150	60270	256.5	4.3	
3	401	153	61264	256.8	4.2	
4	404	151	60864	257.7	4.2	
5	400	152	60769	241.2	4.0	
6	401	151	60534	241.0	4.0	
7	401	150	60294	265.8	4.4	
8	401	152	60760	243.6	4.0	

As per IS Requirements (Table 2, Clause 5.1, 5.2 and 9.4)

Compressive strength		
Grade	**Minimum average**	**Minimum Individual units.**
C (5.0)	5.00 N/mm^2	4.00 N/mm^2
C (4.0)	4.00 N/mm^2	3.20 N/mm^2

* The Results Obtained are Satisfactory as per Standard Requirements

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